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UC DAVIS TO BEGIN IDENTIFYING ELIGIBLE FAMILIES FOR STUDY ON ENVIRONMENTAL FACTORS IN AUTISM

(SACRAMENTO, CALIF.) -- UC Davis researchers are ready to launch the first-ever major epidemiological case-control study of up to 2,000 California children to examine genetic and environmental factors that may affect the development of autism, mental retardation and developmental delay in children.

Parents of children who recently have become eligible to receive services from California's Regional Centers will receive information on how their child can join the Childhood Autism Risks from Genetics and the Environment (CHARGE) study of children between 2 and 5 years of age. Recruitment will continue over the next three years as newly diagnosed children enter the Regional Center system, which coordinates services to developmentally disabled children and adults for the California Department of Developmental Services (DDS).

This study is one of three projects within the UC Davis Center for Children's Environmental Health and Disease Prevention, that was created last fall with grants from the National Institute of Environmental Health Sciences, the U.S. Environmental Protection Agency and the M.I.N.D. Institute at UC Davis. The center is the first to specifically look at severe impairments of social behavior in relation to both genetic and environmental factors. "Most importantly, our researchers will be tackling how genes and environmental factors interact," said Isaac Pessah, the center director and professor of molecular biosciences at UC Davis School of Veterinary Medicine.

"It's clear that genes play a role in autism and developmental delay, but evidence suggests that the environment is also an important factor," said Irva Hertz-Picciotto, professor of epidemiology and preventive medicine at UC Davis School of Medicine and Medical Center. "By studying a large number of children with different types of development, we expect to gain a better understanding of the multiple ways autism and other developmental delays may occur." Hertz-Picciotto, an internationally renowned environmental epidemiologist, is leading the study.

The study, which will be conducted in Los Angeles and north-central California by researchers from UC Davis, UCLA and Kaiser Permanente, will enroll up to 2,000 children with differing patterns of development, including children with autism, children with mental retardation or developmental delay but not autism, and children who are developing typically.

Exposure to a broad array of external factors and measurements of

important physiologic factors will be compared among the three groups. These factors include environmental exposures from chemicals used in industrial processes, consumer products, illnesses of the mother during pregnancy and of the child after birth, medications and vaccinations, and diet. Researchers will also conduct studies on lipids, specific genes, key molecules involved in the working of the immune and nervous systems, and cell-to-cell communication and metabolism.

The researchers will review regional-center records for children with autism and children with mental retardation or developmental delay. Families from both diagnostic groups and families of children with typical development will complete questionnaires and give specimens, and those with autism will participate in a diagnostic work-up.

"By looking at children's medical history, environmental exposure to toxins, diet, genetic background, chemical and cellular markers from tissue samples, and many other aspects of their lives, both before and after birth, we will be able to evaluate possible causes and contributing factors to autism," said Hertz-Picciotto.

The Center for Children's Environmental Health and Disease Prevention is studying molecular and immunological mechanisms underlying neurodevelopmental disorders involving studies in animals and cell systems and of specimens from the children in the CHARGE study.

Pessah, principal investigator for the Center for Children's Environmental Health and Disease Prevention, said the samples will be used to compare and contrast immune responses to vaccine antigens among the three groups.

"Our ultimate goal is to understand common patterns of dysfunction in autism and clarify how toxins contribute to abnormal neurodevelopment so that we can develop rational strategies for intervention and, hopefully, prevention," Pessah said.

More information about the Center for Children's Environmental Health can be found at http://www.vetmed.ucdavis.edu/cceh. For more information about the CHARGE study, visit the Web site at http://beincharge.ucdavis.edu/ or call toll-free (866) 550-5027.

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